B1 Con'd

levels of multi-quantum barrier layers differ from each other. Or, the multi-quantum barrier layer is formed by making the value of x for the $Al_xGa_{1-x}N$ layer of each double layer differ from the value of x of aluminum of the $Al_xGa_{1-x}N$ layers of the other double layers, thereby making the energy levels of multi-quantum barrier layers differ from each other.

Please replace the paragraph bridging pages 10 and 11 with the following:

B2 Cont

Next, an n-type material layer M for generating a laser beam is formed on the substrate. The n-type material layer M consists of an n-type compound semiconductor layer 42, an n-type clad layer 44 and an n-type waveguide layer 46 which are sequentially deposited on the substrate 40. The n-type compound semiconductor layer 42 is made of one of III-V group nitride compounds and it is preferably an n-GaN layer. Preferably, the n-type clad layer 44 is an n-$Al_xGa_{1-x}N$ mono-layer (where $0<x\leq0.2$) containing a predetermined percentage of aluminum Al; however, it may be a double layer, such as a supperlattice layer consisting of an AlGaN layer and a GaN layer. Also preferably, the n-type clad layer 44 has a thickness to minimize the loss of light mode in the direction of installation of the substrate 40. For example, the n-type clad layer 44 has a thickness between 0.5 μm and 1.7 μm. At this time, the strain of the entire semiconductor light emitting device must be considered. Thus, it is preferable that the n-type clad layer 44 is thinner than the minimum value of the above thickness range in order to reduce the strain of the entire semiconductor light emitting device. If the n-type clad layer 44 is thickly formed, the loss of light mode to the substrate 40 can be minimized. The n-type waveguide

layer 46 is preferably an n-GaN layer which is one of III-V group nitride compound semiconductor layers. An active layer 48 is formed on the n-type material layer M for generating a laser beam and the active layer 48 is preferably a material layer having a multi-quantum well structure. Also preferably, the active layer 48 is III-V group nitride compound semiconductor layer and more preferably it is an InGaN layer containing a predetermined percentage of indium (In). Also, the active layer 48 may be a mono-layer or a double layer described in the first, second and third embodiments and its description will not be repeated here. An electron blocking layer 50 and a p-type waveguide layer 52 are sequentially formed on the active layer 48. At this time, the electron blocking layer 50 is preferably an AlGaN layer containing a predetermined percentage of aluminum in order to enhance the electron blocking efficiency; however it may be a multi-quantum barrier layer 5 and 6 described in the first through third embodiments. The p-type waveguide layer 52 has almost the same structure as the n-type waveguide layer 46 except that a p-type doping material is used. Preferably, the p-type waveguide layer 52 has a thickness to get the highest value in light mode and light gain, such as 0.15 μm ~ 0.2 μm. A p-type compound semiconductor layer 54 is formed on the p-type wave layer 52. Preferably, the p-type compound semiconductor layer 54 has almost the same structure as the n-type compound semiconductor layer 42 except that an n-type doping material is used. However, on the p-type compound semiconductor layer 54, a p-type electrode (not shown) is formed, and thus, it is preferable that the p-type compound semiconductor layer 54 has a higher doping concentration than the p-type waveguide layer 52 in order to make its electrical resistance low. For example, the p-type waveguide layer 52 and the p-type compound

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semiconductor layer 54 can be the same material layer, wherein the doping concentration of the p-type compound semiconductor layer 54 is higher than that of the p-type waveguide layer 52.

Please replace the paragraph at page 12, lines 5-15 with the following:

B3

FIGS. 12A and 12B are energy band diagrams of material layers constituting a conventional laser diode and a laser diode according to the fourth embodiment of the present invention, respectively. Referring to FIGS. 12A and 12B, an energy band E_{nc} of a conventional n-type clad layer has a smaller width than an energy band E_{nc}' of an n-type clad layer of the present invention. In addition, in FIGS. 12A and 12B, an energy band corresponding to an energy band E_{pc} of a conventional p-type clad layer does not appear next to an energy band E_{eb}' of an electron blocking layer of the present invention corresponding to an energy band E_{eb} of a conventional electron blocking layer. Reference numerals E_{mqw} and E_{mqw}' indicate energy bands of active layers having a conventional multi-quantum well structure and a multi-quantum well structure of the present invention, respectively.